

1. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-8 - 6x < \frac{-37x + 8}{7} \leq -8 - 9x$$

- A.  $(-\infty, a] \cup (b, \infty)$ , where  $a \in [-14.25, -9.75]$  and  $b \in [-3.75, -2.25]$   
B.  $[a, b)$ , where  $a \in [-14.25, -11.25]$  and  $b \in [-3.75, 0]$   
C.  $(a, b]$ , where  $a \in [-17.25, -9]$  and  $b \in [-6, 1.5]$   
D.  $(-\infty, a) \cup [b, \infty)$ , where  $a \in [-13.5, -12]$  and  $b \in [-5.25, -1.5]$   
E. None of the above.
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2. Using an interval or intervals, describe all the  $x$ -values within or including a distance of the given values.

No less than 4 units from the number  $-5$ .

- A.  $[-9, -1]$   
B.  $(-\infty, -9) \cup (-1, \infty)$   
C.  $(-\infty, -9] \cup [-1, \infty)$   
D.  $(-9, -1)$   
E. None of the above
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3. Using an interval or intervals, describe all the  $x$ -values within or including a distance of the given values.

No more than 9 units from the number  $-2$ .

- A.  $[-11, 7]$   
B.  $(-11, 7)$   
C.  $(-\infty, -11] \cup [7, \infty)$   
D.  $(-\infty, -11) \cup (7, \infty)$

E. None of the above

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4. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-4}{6} - \frac{8}{7}x \leq \frac{-3}{4}x + \frac{3}{2}$$

- A.  $[a, \infty)$ , where  $a \in [0.75, 6]$   
B.  $(-\infty, a]$ , where  $a \in [3.75, 8.25]$   
C.  $[a, \infty)$ , where  $a \in [-6.75, -3]$   
D.  $(-\infty, a]$ , where  $a \in [-6, -3]$   
E. None of the above.
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5. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-10x + 3 < 7x - 4$$

- A.  $(a, \infty)$ , where  $a \in [-0.62, -0.02]$   
B.  $(-\infty, a)$ , where  $a \in [-0.5, 0.2]$   
C.  $(a, \infty)$ , where  $a \in [0.03, 1.55]$   
D.  $(-\infty, a)$ , where  $a \in [0.2, 0.5]$   
E. None of the above.
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6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-3x - 7 < 3x - 6$$

- A.  $(a, \infty)$ , where  $a \in [-0.06, 0.59]$   
B.  $(-\infty, a)$ , where  $a \in [-0.34, -0.13]$

- C.  $(-\infty, a)$ , where  $a \in [0.05, 0.9]$
  - D.  $(a, \infty)$ , where  $a \in [-0.93, -0.15]$
  - E. None of the above.
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7. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$9 - 3x > 6x \text{ or } 7 + 6x < 7x$$

- A.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-9, -4.5]$  and  $b \in [-4.5, 3]$
  - B.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-8.25, -3]$  and  $b \in [-2.25, 2.25]$
  - C.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-2.25, 2.25]$  and  $b \in [1.5, 13.5]$
  - D.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-2.25, 7.5]$  and  $b \in [6, 9]$
  - E.  $(-\infty, \infty)$
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8. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{10}{8} - \frac{10}{7}x < \frac{-4}{5}x - \frac{10}{9}$$

- A.  $(-\infty, a)$ , where  $a \in [-6.75, -0.75]$
  - B.  $(a, \infty)$ , where  $a \in [0.75, 6.75]$
  - C.  $(a, \infty)$ , where  $a \in [-8.25, -2.25]$
  - D.  $(-\infty, a)$ , where  $a \in [3, 5.25]$
  - E. None of the above.
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9. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$6 + 7x > 8x \text{ or } 8 + 3x < 4x$$

- A.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-12, -4.5]$  and  $b \in [-8.25, -4.5]$
  - B.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-15.75, -6]$  and  $b \in [-9, -4.5]$
  - C.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [2.25, 9.75]$  and  $b \in [4.5, 11.25]$
  - D.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [2.25, 9]$  and  $b \in [6.75, 15]$
  - E.  $(-\infty, \infty)$
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10. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$9 - 5x \leq \frac{21x - 8}{6} < 9 + 3x$$

- A.  $(-\infty, a] \cup (b, \infty)$ , where  $a \in [-4.5, 0.07]$  and  $b \in [-22.5, -17.25]$
  - B.  $(-\infty, a) \cup [b, \infty)$ , where  $a \in [-4.5, 0]$  and  $b \in [-21, -19.5]$
  - C.  $[a, b)$ , where  $a \in [-4.5, 0.75]$  and  $b \in [-23.25, -15]$
  - D.  $(a, b]$ , where  $a \in [-4.27, 0]$  and  $b \in [-24, -15]$
  - E. None of the above.
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